

REMARKS

Entry and consideration of the above-identified application and claims in view of Applicants' amendment and remarks are respectfully requested. Applicants herein amend Claim 1 for clarity, and such amendment is supported in the specification and claims as filed. Withdrawn claim 31 is cancelled to further prosecution. Claims 1-30 are pending.

The Restriction Requirement was made final in the Office Action of May 3, 2004. Applicants herein cancel non-elected claim 31 to further prosecution.

Claims 1 and 3-30 were rejected under 35 U.S.C. §103(a) over Guire et al. (U.S. Pat. Appl. Pub. 2003/0073086 A1). Claim 2 was rejected under 35 U.S.C. §103(a) over Guire et al. in view of Nova (U.S. Pat. 6,340,588 B1). For at least the following reasons, Applicants traverse the rejections.

The Office Action of May 3, 2004, states that Guire et al. teaches a method of making microarrays by immobilizing microparticles on a support, wherein the microparticles are trapped in a receiving layer which is then cross-linked by activation of a cross-linking agent. The Office Action asserts this cross-linking is a sol/gel transition. The Office Action states that Nova teaches a method of coating matrix materials on supports with bioactive agents, wherein the matrix material can be cellulose, gelatin, or dextran.

The invention is directed towards a method of making a microarray, wherein the method includes the following steps in the order of:

- providing a support;
- coating on the support a receiving layer to receive microspheres, the receiving layer being capable of undergoing sol/gel transition by thermal gelation;
- coating on the receiving layer a dispersion of microspheres in a carrier fluid, wherein the carrier fluid contains at least one crosslinking agent;
- allowing the at least one crosslinking agent to migrate into the receiving layer;
- allowing the microspheres to partially submerge into the receiving layer;

--inducing sol/gel transition by thermal gelation of the receiving layer with the at least one crosslinking agent, thus immobilizing the microspheres;

--evaporating off the carrier fluid; and

--allowing crosslinking between the receiving layer and the crosslinker in the carrier fluid initiated by thermal gelation to go to completion.

As claimed and described herein and in the specification, the immobilization is done in two steps, before and after evaporation of the carrier fluid, in order to maintain the relative positions of the microspheres on the support. See the specification at least at page 7, line 2, through page 8, line 4. As claimed, two separate bonding steps are necessary to bond the microspheres in the receiving layer to the support. The first bonding step comprises sol/gel transition of the receiving layer to immobilize the microspheres and prevent movement thereof during subsequent evaporation of the carrier fluid. The second bonding step, after evaporation of the carrier fluid, comprises crosslinking of the receiving layer with the crosslinking agent to complete immobilization of the microspheres in the receiving layer. The crosslinking agent is present in the receiving layer because it migrates there on coating of the carrier layer including the crosslinking agent on the receiving layer, leaving primarily the carrier fluid present on the surface of the receiving layer.

Guire et al. does not disclose or suggest a two-part bonding of the microspheres in a receiving layer. Guire et al. immobilizes the microspheres in a single step by crosslinking of an immobilization material, or by interaction of two or more reactive mobilization materials, as found in a binding pair. See paragraphs 0085 and 0099, and examples. Guire does not disclose or suggest two separate bonding steps separated by evaporation of a microparticle carrier fluid in order to bond the microparticles to a support and immobilize them.

Nova does not cure the deficiencies of Guire et al. because Nova does not disclose or suggest two separate bonding steps separated by evaporation of a microparticle carrier fluid.

For at least the above reasons, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) over Guire et al., and Guire et al. in view of Nova, are in order and respectfully requested.

Applicants submit all of Claims 1-30 are in condition for allowance. Prompt and favorable action is respectfully requested.

Should the Examiner require anything further, or have any questions, the Examiner is asked to contact Applicants' undersigned representative.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Kathleen Neuner Manne', written over a horizontal line.

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